AUTHOR INDEX

Aberdam, D. 323
Ache, H.J. 158, 160
Adams, D.L. 320, 321, 322
Adler, G. 159
Adnot, A. 322
Agayan, B.S. 160
Ainsworth, S. 156
Akinci, G. 325
Alenchikova, I.F. 156
Alexander, A. 22
Alfassi, Z.B. 157
Algazin, Yu.B. 159
Amirav, A. 160
Anderegg, J.W. 319
Andersen, J.N. 322
Anderson, J.R. 158
Anderson, P.W. 236
Andersson, D. 158
Andersson, S. 320, 321, 322
Andrei, N. 236
Antoci, S. 156
Aristov, V. 159
Au, C.T. 156, 158
Auger, H.O. 319
Auvray, L. 23
Avery, N.R. 157
Awe, B. 155
Ayyoob, M. 160
Azaroff, L.V. 321

Bachelet, G.B. 159
Baer, M. 157
Baetzold, R.C. 155, 156
Bagus, P.S. 155, 158, 237
Baklanov, M.R. 159
Bakshi, Y. 160
Ballu, Y. 236
Balooch, M. 157, 158
Bange, K. 155, 160
Bardi, U. 156, 322
Baribeau, J.M. 323
Barnett, K.G. 23
Bartels, E. 155
Bartelt, N.C. 325
Bartős, I. 321
Batra, I.P. 320
Baudoing, R. 320, 322, 323, 324
Bauer, E. 154, 157, 237, 318, 323, 325
Bauschlicher, C.W. 237
Bauschlicher, C.W., Jr. 156, 158
Bechtold, E. 154, 156
Bedzyk, M.J. 159
Beeby, J.L. 320
Behm, R.J. 321, 322, 324
Benbow, R.L. 157
Benndorf, C. 155
Berger, C. 318
Bernard, R. 318
Berndt, W. 155, 318
Bertel, E. 156
Berthier, Y. 158
Bertolini, J.C. 324
Bertoni, C.M. 159
Besold, G. 321, 323, 325
Bhattacharya, A.K. 157
Biberian, J.P. 157, 321
Bickel, N. 321, 322, 323, 324
Binder, K. 22, 325, 326
Birgeneau, R.J. 158
Blais, J.C. 154, 157, 158
Blakely, J.M. 154, 155
Blanckenhagen, P. 237
Block, J.H. 326
Bogen, A. 159
Boileau, S. 23
Bolbach, G. 154, 157, 158
Bol'shov, L.A. 154
Bonczek, F. 154
Bonsall, L. 237
Born, M. 23
Bouchaud, E. 23
Boudreaux, D.S. 320
Bourdon, E.B.D. 158
Bowker, M. 155
Braun, O.M. 236
Brenig, W. 236, 326
Brigden, P.J. 157
Brongersma, H.H. 157
Brooks, R.S. 155, 156
Broughton, J.Q. 157
Brownstein, K.R. 325
Brundle, C.R. 237

Brunot, A. 158
Buchanan, D.N.E. 155
Bullett, D. 154
Burgess, A.W. 23
Burke, N.R. 236
Burke, P.G. 319
Buttner, P. 155
Bye, J. 157

Cabrera, N. 155
Calandra, C. 159
Campbell, C.T. 158, 160
Campbell, R.L. 322
Campuzano, J.C. 156, 318, 325
Carette, J.D. 322, 323
Carghill, G.S. III 237
Carley, A.F. 156
Carvalho, V.E. 319
Celotta, R.J. 322
Chaban, E.E. 319
Challa, M.S.S. 325
Chan, C.-M. 318
Chandler, P.E. 159
Chang, Chin-an 155
Charmet, J.C. 23
Chinn, M.D. 318
Christmann, K. 321, 322
Christmann, S.B. 319
Chuang, T.J. 154, 155
Chung, D.D.L. 158
Cisneros, G. 323
Citrin, P.H. 154, 155, 159
Clark, D.E. 325
Clarke, L. 320
Clarke, L.J. 157, 318
Coburn, J.W. 155, 158
Cochran, S.A. 156
Cohen, M.L. 159
Cohen-Stuart, M. 23
Combescot, M. 236
Cook, M.W. 319
Cosgrove, T. 23
Cotton, J.P. 23
Courths, R. 155
Cowan, P.L. 159
Cowell, P.G. 319, 322
Coz, M.P. 157, 158, 326
Crapper, M.D. 154, 156
Crowley, T.L. 23
Cubicciotti, D. 158
Cunningham, J.A. 236

Dagoury, G. 154
Daoud, M. 23
Das, T.P. 159
Davies, P.W. 154, 157
Davis, H.L. 318, 321, 324
Davis, L.C. 322
de Alfaro, V. 319
De Andres, P.L. 324
De Caravallio, V.E. 322
De Dominicis, C. 236
de Gennes, P.G. 22, 23
de la Garza, L.M. 157
Debe, M.K. 324
DeBersuder, L. 318
Debnath, N.C. 157
Dejardin, P. 23
Delamare, F. 154
Delchar, T.A. 318
Demuth, J.E. 237, 321, 322
des Cloizeaux, J. 22
Dev, B.N. 159
di Marzio, A. 22
De Cenzo, S.B. 155
Dickinson, D.A. 157
Dickinson, J.T. 157
Diehl, H. 23
Dietz, R.E. 322
Dillard, J.G. 158, 160
Dobson, P.J. 323
Doehl, R. 160
Dominiguez, D.D. 158
Doniach, S. 236
Donohue, J. 154
Doroshenko, V.A. 160
Dowben, P.A. 154, 156, 157
Dresselhaus, M.S. 158
Dub, P. 320
Duke, C.B. 320, 321, 322, 324
Dupuy, C. 318
Dupuy, J.C. 318
Durham, P.J. 324

Eastman, E. 236
Ebert, H. 159
Echenique, P.M. 319
Eggeling, C.V. 321
Ehrlich, A.C. 158
Ehsasi, M. 326
Eichler, B. 156
Einstein, T.L. 236, 325
Eisenberger, , P. 155, 159
Eiswirth, M. 326
Elam, W.T. 158
Elber, R. 160
Elconin, M.H. 321
Engel, T. 154
Engler, C. 159
Erbil, A. 158
Erley, W.W. 156
Ertl, G. 318, 321, 322, 324, 325, 326

Estrup, P.J. 154, 318, 320
Ewald, P.P. 321

Fain, S.C., Jr. 318
Farnoux, B. 23
Farnsworth, H.E. 318
Farrell, H.H. 154, 155, 156, 157
Fedak, D.G. 156
Feder, R. 155, 319, 320
Fedorus, A.G. 237, 325
Feibelman, P.J. 157, 159
Feldman, J.L. 158
Feldman, L.C. 320, 322
Felter, T.E. 160, 318
Ferrer, S. 155
Feulner, P. 323
Field, D. 158
Fischer, M.E. 325
Fleischmann, M. 158
Flores, F. 237
Florio, J.V. 156, 159
Flynn, C.F. 236
Foord, J.S. 157, 158, 159
Forstmann, F. 155
Foster, M.S. 318, 325
Foulias, S.D. 157
Frahm, A. 159
Frank, F.C. 154
Freedman, A. 158
Freeman, A. 158
Friauf, R.J. 154, 155
Frost, D.C. 319, 321, 322, 323
Frost, J.C. 321, 323
Funke, P. 159
Furuya, K. 236

Gadzuk, J.W. 160, 236
Gard, P. 320
Garwood, G.A. 160
Garwood, G.A., Jr. 156, 157, 160
Gaubert, C. 322, 323
Gauthier, J. 322
Gauthier, Y. 320, 322, 324
Geldart, D.J.W. 326
Gel'bshstein, A.I. 160
Gemuden, D.V. 319
Gerber, R.B. 160
Gerenser, L.J. 155, 156
Gibson, W.K. 159
Wibson, W.M. 159
Goodale, J. 237
Goddard, P.J. 154, 155
Goddard, W.A. 156
Goddard, W.A. III 237
Goldmann, A 154, 155
Golovchenko, J.A. 159
Gomati, M.M.El. 156
Gomer, R. 236, 327
Goodman, D.W. 156
Gossman, H.-J. 320
Grebnev, N.I. 159
Greenlaw, D.K. 236
Greenside, H.S. 155, 156
Grider, D.E. 155, 160
Grimley, T.B. 236
Grimm, W. 323
Gronwald, K.D. 318
Grunze, M. 154, 157, 326
Gruzalski, G.R. 324
Gudde, N.J. 158
Gumhalter, B. 236
Gunnarson, O. 236
Gunton, J.D. 325, 326
Gutman, A. 319
Gutman, E.E. 160
Győrffy, B.L. 324

Hagstrum, H.D. 159
Halachev, T. 160
Halachev, T.D. 156
Haldane, F.D.M. 236
Hamann, D.R. 154, 155, 156, 157
Hammer, L. 319, 321, 322, 326
Hanaguchi, I. 326
Hanke, G. 319
Harrington, D.A. 160
Hayakawa, H. 23
Heath, T.G. 23
Heavens, O.S. 319
Hedin, L. 320
Heermann, D.W. 326
Heilmann, P. 319, 324
Heine, V. 320
Heinz, K. 318, 319, 321, 322, 323, 324, 325, 326
Hendra, P.J. 158
Hengrasmee, S. 323
Hentschke, R. 325
Henzler, M. 318
Herlt, H.J. 323
Hersbach, D.R. 158
Herschberger, J.F. 160
Hertel, N. 159
Hertlein, T. 319
Hewitt, R.C. 155
Hewson, A.C. 236
Himpsel, F.J. 154, 158, 159, 236, 321, 322
Hino, S. 157
Hjelmberg, H. 237
Ho, K.M. 159
Hodges, C.H. 324

Hoeve, C.A. 22
Holland, B.W. 155, 320
Holloway, S. 160
Holtz, J. 237
Hopkins, B.J. 154, 157, 159
Horn, P.M. 158
Hoshino, Toshiharu 159
Hösler, W. 320
Hosokawa, Y. 326
Howe, R. 237
How-sen Wang 160
Hu Zi-pu 323
Huang, H. 321
Hubbard, A.T. 156, 157, 160
Hubbard, J. 237
Hughes, H.P. 158
Hurych, Z. 157
Hydes, A.J. 158

Ibach, H. 324
Ichinokawa, T. 326
Ignatiev, A. 321, 322, 323
Ikeda, S. 156
Illas, F. 158, 159
Imbihl, R. 322, 324, 326
Inglesfield, J.E. 320
Ishikawa, Y. 326
Ishinabe, T. 23

Jackman, R.B. 159
Jaeger, R. 237
Jagodzinski, H. 321, 324, 329
Jaklevic, R.C. 322
Janak, J.F. 320
Jannik, G. 22, 23
Jelinsky, P. 319
Jennings, G. 325
Jennings, P.J. 319, 320, 322, 323
Jepsen, D.W. 155, 320, 321, 322
Jepsen, O. 323
Jiang, P. 322
Johnansson, P.K. 237
Johnson, P.D. 155, 157
Joly, Y. 322, 324
Jona, F. 154, 155, 156, 319, 320, 321, 322, 323
Jones, R.G. 154, 155, 156, 157, 160
Jones, R.O. 322, 323
Joyce, S. 158
Joyner, R.W. 160
Jugner, Y. 158

Kaburagi, M. 237
Kahn, A. 320, 321, 322
Kai-ming, Zhang 155
Kajiwara, Y. 160
Kalia, R.K. 237
Kamath, P.V. 160
Kambe, K. 320
Kaminska, T.J. 319
Kanaji, T. 318
Kanamori, J. 237
Kanash, O.V. 237
Kang, W.M. 155
Kao, C.-T. 318
Kaplan, D.R. 159
Kar, N. 155
Kasemo, B. 158, 320, 322
Katekaru, J.Y. 160
Kawogushi, M. 23
Kay, E. 158
Kendelwicsz, T. 237
Kesmodel, L.L. 319, 321, 323
Khan, I.H. 158
Khomskii, D.I. 236
Kiejna, A. 236
Kim, Son Chum 156
King, D.A. 155, 156, 322, 324
King, T. 23
Kinniburgh, C.G. 320
Kirch, G. 158, 160
Kirschner, J. 318, 326
Kishi, K. 156
Kishimoto, S. 160
Kisinova, M. 156
Kitson, M. 154, 155, 160
Kittel, C. 236, 237
Kleban, P. 325
Klee, H. 158
Klein, J. 23
Kleinherbers, K.K. 155
Kleinle, G. 322
Klemperer, D.F. 158
Klewe-Nebenius, H. 158, 160
Knabbe, E.A. 158
Knorr, K. 158
Koestner, R.J. 318, 319, 321, 323
Köhler, H. 323
Kohn, W. 236
Kolackiewcz, J. 237
Kolodney, E. 160
Kortan, A.R. 158, 325
Kosetner, R.J. 323
Kotani, A. 236
Kramer, H.M. 157
Kremer, K. 23
Kreuzer, H.-J. 326
Kriebel, D.L. 237, 325
Krishnan, G.N. 158
Kruger, B. 155
Kuppers, J. 318, 325
Kuroda, T. 160

Lad, R.J. 154
Lagally, M.G. 318, 319, 325, 326
Lambert, L.J. 156
Lambert, R.M. 154, 155, 156, 157, 158, 160
Lamble, G. 155, 156
Lamble, G.M. 155
Lampton, M. 319
Landau, D.P. 325
Lander, J.J. 154
Landgren, G. 154, 158
Lankskron, H. 323, 324
Lang, E. 318, 319, 321, 323, 324
Lang, N.D. 236
Lapp, A. 23
Laramore, G.E. 320
Laskowski, B.D. 155
Lassiter, W.S. 157
Lau, K.H. 236
Law, D.S. 157
Layderant, L. 318
Le Bosse, J.C. 322, 323
Lecante, J. 236
Lee, B.W. 322
Lee, E.P.F. 157
Lee, Ven-Chung 160
Lehwald, S. 324
Leonhard, H. 156, 319
Li, C.H. 155, 321
Liebsch, A. 324
Lieske, N. 324
Lin, C.C. 159
Lin, R. 323
Lin, R.F. 323
Lindgren, S.A. 320, 321
Lindroos, M. 323, 324
Litzman, O. 320
Liu, H. 320
Lloyd, D.R. 156
Lopez, J. 322, 323
Lorenz, W. 159
Loucks, T. 319
Loudiana, M.A. 157
Lowenstein, J.H. 236
Lu, T.-M. 318, 325
Lubenski, T.C. 23
Lumsden, J.B. 157
Lundberg, M. 324
Lundqvist, B.I. 158, 320
Lyo, S.K. 236
Lytle, F.W. 158
Lyuksutov, I.F. 325

Machiels, A.J. 157
Maclaren, J.M. 160
Madey, T.E. 160
Madix, R.J. 159
Maglietta, M. 156, 319
Maier, M. 325
Maldanado, A.L. 321
Malic, R.A. 319
Malina, R.F. 319
Malstrom, G. 323
Manghi, F. 159
Maradudin, A.A. 237
March, N.H. 237
Marcus, P.M. 154, 155, 156, 319, 320, 321, 322, 323, 324
Margaritondo, G. 159
Marilier, A. 158
Marinero, E.E. 25
Mark, P. 321, 322
Martenson, B.M. 160
Martin, C. 319
Martin, J.A. 318
Masaru Tsuka 159
Masip, J. 159
Masud, N. 320
Materlik, G. 159
Matsudaira, T. 156
Matsushima, T. 324
Mattheiss, L.F. 154, 155
Matthew, J.A.D. 156, 323
Mazenko, G.F. 325
McConville, C.F. 154, 155, 156
McFeely, F.R. 154, 158
McGuire, E.J. 159
McKay, S.R. 322
McLaren, J.M. 318
McNevin, S.C. 159
McRae, E.G. 154, 319, 320, 322, 323
Mednick, K. 159
Medvedev, V.K. 237
Meeham, P. 160
Mei, W.N. 320
Menzel, D. 321, 323, 324
Meyer, R.J. 321, 322
Michalk, G. 321, 323
Miguel, M.S. 325
Mihich, L. 156
Mima, H. 160
Mishra, K.C. 159
Mitchell, K.A.R. 319, 321, 322, 323
Mochrie, S.G.J. 158
Moers, H. 158, 160
Mohapatra, S.M. 159
Mallardier, J. 324
Moncton, D.E. 158
Moore, I.D. 237
Moore, W.T. 321, 322
Morales de la Garza, L. 157
Moritz, W. 318, 319, 320, 321, 322,

(Moritz, cont.)
323, 324, 325, 326
Moroney, L. 160
Morrison, J. 154
Moruzzi, V.L. 320, 324
Mott, N.F. 155
Mrstik, B.J. 323
Mueller, D. 156, 157
Muller, F. 321
Muller, H. 326
Muller, K. 318, 319, 320, 321, 322, 324, 325, 326
Muller-Hartman, E. 236
Muscat, J.-P. 236
Myasnikov, I.A. 160

Nagano, S. 319
Nakamura, S. 160
Nakatsuka, H. 318
Napartovich, A.P. 237
Naumovets, A.G. 237
Naumovets, A.G.N. 237
Nechwatal, A. 159
Nefedov, V.I. 156
Neff, H. 160
Netzer, F.P. 156
Neve, J. 320, 321
Newns, D.M. 158, 236
Nichtl, W. 322
Nielsen, H.B. 321, 322
Ninomiya, K. 159
Nishimatsu, S. 159
Noon, J.R. 321
Noonan, J.R. 318, 321, 324
Norman, D. 155
Nørskov, J.K. 158
Norton, P. 237
Norton, P.R. 326
Nozières, P. 236

Ober, R. 23
Obvintseva, L.A. 160
Oed, W. 322, 324
Ogeltree, D.F. 323
Oktani, H. 318
Okudaira, Sadayuki, 158
Olander, D.R. 157, 158
Onchi, M. 156
Oudar, J. 158

Packard, W.E. 321
Paffett, M.T. 160
Pandy, K.C. 159
Paolucci, G. 160
Park, R.L. 318, 325
Park, S. 155, 157
Parkinson, B.A. 160
Passler, M.A. 321, 322
Patel, J.R. 159
Paton, A. 320, 321, 322
Paul, M.C. 154
Paz, L. 23
Pendry, J.B. 160, 318, 319, 320, 321, 322, 323, 324
Penka, V. 322
Peralta, L. 158
Perry, D.L. 157, 160
Petersen, I. 322
Pettersson, Lars G.M. 155
Peyer, P. 22
Pfennig, G. 158, 160
Pfnür, H. 321, 323, 324, 325
Phariseau, P. 324
Philip, J. 321
Pierce, D.T. 322
Piercy, P. 325
Pincus, P. 23
Pogorely, V.N. 237
Pokrovsky, V.L. 237
Potts, A.W. 157
Prabhakaran, K. 160
Price, G.G. 154, 157
Prince, N.P. 154
Prince, R.H. 157, 158
Prutton, M. 156, 319
Puchta, W. 322
Puga, M.W. 320

Ramakrishnan, T.V. 236
Rao, C.N.R. 160
Rassias, S. 160
Rathbun, L.C. 155, 157
Rawlings, K.J. 154, 157
Read, M.N. 319, 322
Reed, A.P.C. 157
Regge, T. 319
Reihl, B. 236
Repinsky, S.M. 159
Rhodin, T.N. 155, 156, 157, 323
Ricart, J.M. 158
Richard, A. 155
Richardson, N.V. 155, 160
Richardson, S.L. 322
Rieger, D. 159
Riley, C.E. 154
Ritchie, R.H. 236
Robbins, M.F. 159
Roberts, M.W. 156, 158, 160
Robertson, W.D. 156, 159
Robinson, J. 158
Roe, D.K. 160
Roelofs, L.D. 237, 325

Roev, L.M. 160
Ron, S. 157
Roop, B. 158
Rosasco, S.D. 157, 160
Rous, P.J. 318, 320, 323, 324
Rousseau, J. 154
Rouweler, G. 157
Rovida, G. 156
Rowe, J.E. 154, 155, 319
Royer, W.A. 155
Rubin, M.H. 23
Rubio, J. 158, 159
Ruckenstein, E. 156, 160
Rundgren, J. 320, 321, 322, 323, 324
Russel, G.J. 319, 322, 324
Rüstig, J. 326
Rut'kov, E.V. 237
Ryoin, K. 23

Saalfeld, H. 155
Safran, S. 237
Sahni, P.S. 325
Sahoo, N. 159
Sakisaka, Y. 156, 157
Sakurai, T. 160
Salaita, G.N. 160
Saldin, D.K. 318, 323, 324
Salwen, A. 320
Sasada, T. 236, 237
Sass, J.K. 155, 160
Sayuki, Okudaira 158
Schack, R. 23
Schaffroth, Th. 321
Schardt, B.C. 157, 160
Scheujens, J. 22
Schick, M. 325
Schiff, L.I. 236
Schlüter, M. 159
Schmidt, L.D. 236
Schmidt, G. 321, 325, 326
Schmidtlein, G. 324
Schnell, R.D. 159
Schommers, W. 325
Schönhammer 236
Schrieffer, J.R. 236
Schrott, A.G. 154, 318
Schulte, F.K. 236
Schultz, J.C. 158
Schwaha, K. 155, 156
Schwarz, J.A. 159
Seel, M. 158
Sendecki, S. 160
Sesselmann, W. 154, 155
Seymour, D.L. 154
Shaw, C.G. 318
Shek, M. 237
Shepherd, F.R. 319, 321
Shern, C.S. 318
Shih, H.D. 322
Shima, Y. 157
Shin, N.D. 154
Shin'ichi Tachi 158
Shinjo, K. 158, 236, 237
Shinn, N.D. 158
Siekhaus, W.J. 157, 158
Silverman, P.J. 322
Skelton, E.F. 158
Slater, J.C. 319
Smereka, T.P. 237
Smith, N.V. 155, 157
Smith, T. 157, 158
Smoluchowski, R. 156
So, E. 322
Sokolov, J. 322
Solomun, T. 157, 160
Somerton, C. 155, 156
Somorjai, G.A. 318, 319, 321, 323
Son Chum Kim 156
Sondericker, D. 156, 324
Song, D. 160
Sorensen, C.S. 322
Soriaga, M.P. 160
Spencer, N.D. 154, 156
Spicer, W. 237
Stair, P.C. 318, 319, 321
Stanley, H.E. 325
Starke, U. 324
Steensgaard, I. 322
Steinfeld, J.I. 158
Steinman, W. 159
Stevens, M.A. 319, 324
Stickney, J.L. 157, 160
Stinespring, C.D. 158
Stocks, G.M. 325
Stott, Z.T. 158
Ströhr, J. 237
Strozier, J.A. 319
Sugano, S. 158, 236
Sun, X. 23
Suzuki, K. 159
Svitashev, K.K. 159
Sweeny, P.J.J. 154

Tachi, Shin'ichi 158
Tadros, Th.F. 23
Tait, R.H. 323
Takahashi, A. 23
Taki, Y. 318
Tamura, E. 155, 320
Taupin, C. 23
Taylor, D.E. 325
Taylor, P.A. 159

Taylor, T.N. 158
Tear, S.P. 319, 323
Telieps, W. 318
Thiel, P.A. 319, 321
Thodin, T.N. 157
Thomas, G. 322
Thompson, G. 322
Thompson, N. 158
Thompson, W.A. 322
Thundat, T. 159
Thurgate, S.M. 320
Tian Zeng-ju 155
Titterington, D.J. 319, 320
Tmenov, D.N. 160
Tong, A.W.L. 156
Tong, S.Y. 155, 319, 320, 321, 323, 325
Tontegode, A.Ya. 237
Topping, R. 237
Tornqvist, E. 158
Torrance, J.B. 237
Toshiharu Hoshino 159
Toulouse, G. 236
Toyozawa, Y. 236
Traum, M.M. 155, 157
Tringides, M.C. 326
Tromp, R. 321
Trowbridge, L.D. 158
Tsivenko, V.I. 160
Tsong, J.C. 321
Tsukada, M. 159, 236
Tu, Y.Y. 155
Tucker, C.W., Jr. 320
Turner, J.D. 23
Tysoe, W.T. 154, 156

Uimin, G.V. 237
Unertl, W.N. 318, 322, 325
Upton, T.H. 156, 237
Urano, T. 318

Valls, O.T. 325
Van der Ligt, G.C.J. 157
van der Merwe, J.H. 154
ven der Veen, J.F. 325
Van Hove, M.A. 318, 319, 320, 321, 322, 323, 325
Van Lent, B. 23
Vanselov, R. 237
Varma, Shika 157
Varoqui, R. 23
Vashishta, P. 237
Velula, Yu. S. 237
Ven-Chung Lee 160
Veremeenko, M.D. 156
Vigner, D. 154
Volokitin, A.I. 236
von Blanckenhangen, P. 325
Voorhees, P.W. 326
Voznyuk, V.I. 160
Vvedensky, D.D. 324

Wagner, H. 156, 236
Walch, S.P., Jr. 237
Walker, S.M. 236
Wallden, L. 158, 320, 321
Wandelt, K. 159
Wang, G.C. 318, 322, 325
Wang, How-sen 160
Washimi, H. 160
Watanabe, K. 326
Watson, P.R. 319, 321
Waugh, K.C. 155
Webb, M.B. 321
Weeks, S.P. 155, 319
Weinberg, W.H. 318, 321
Weissman, D. 237
Welkie, D.G. 319
Wendelken, J.F. 325
Wertheim, G.K. 155
Westphal, D. 154, 155
Westrin, P. 320, 321
White, S.J. 322
Wiechert, H. 158
Wieckowski, A. 157, 160
Wilhelmsson, S.O. 160
Williams, A.R. 236, 320
Williams, E.D. 321, 325
Williams, J.F. 319
Williams, P. 159
Willis, R.F. 318, 320, 325
Winters, H.F. 155, 157
Wojciechowwski, K.F. 236
Wolf, D. 318, 321, 324
Wolf, E. 23
Wolf, W. 320
Wolfindale, B. 155
Wood, B.J. 158
Woodruff, D.P. 154, 155, 156, 157, 318
Woolfson, M.S. 155
Wu, P.K. 326

Xie Xi-de 155
Xu, G. 320
Zu, M.L. 321
Xu, Y. 159

Yakivchuk, A.I. 237
Yang, W.S. 319, 320, 323
Yates, J.T., Jr. 321
Ye, L. 159

Yeh, J.L. 321, 322
Yonsif, S.Y. 323
Yoshida, N. 160

Zamazzi, E. 155, 156, 321
Zandberg, E.Ya. 237
Zang, K. 159
Zengenhagen, J. 159
Zeng-ju, Tian 155
Zhang Kai-ming 155
Zimmer, H.-G. 155
Zimmer, R.S. 320

SUBJECT INDEX

Absorption process, single adatom multivalency and 187, 189, 191-195, 197. See also Photoabsorption spectra
Accuracy standards, LEED analysis and 282-283
Adatom interactions, phase diagrams and 307-308
Adatoms, multivalencies for 161-166
  many adatoms, 206-234
  single adatom 166-206.
Adiabatic limit, single adatom multivalency 167-174
  image-force stabilization and 167-168. 169
  inverse 174-177
    minima and 174-175
    shape of 175-177
  variational method and 180-181
Adiabatic potential
  image-force stabilization and 167-168, 169, 174
  minima and 168, 170, 171, 172-173
  shape of
    global 169-174
    in inverse adiabatic limit 175-177
Adsorbed system, dynamical processes of 186-189
  calculation formalism 189-197
  optical absorption process 187, 189, 191-195, 187
  perturbation theory and 189-190
  photoabsorption spectra 197-200
  photoemission spectra 200-205
  reflectivity, gas atoms/ metal surfaces 205-206, 207
Adsorbed system parameters, single adatom multivalency 183-186
  conditions for 184-186
  electron affinity of adatom 183, 184
  intra-atomic Coulomb interaction 183
  ionization potential 183, 184, 205
  surface plasmon frequency 184, 185
Adsorption. See also Coadsorption studies, halogen
  compression structures 37-40
(Adsorption, cont.)
  disordered 300-304
  of halogen on solid surfaces 29-153
Adsorption, disordered 300-304
  beam neglect method and 301
  cluster method and 301-302
  diffuse Leed intensities and 300-301, 304
  Y-forces and 302-303
  tensor Leed and 302
Adsorption structures
  compression model 37-40
    Cl/Fe(100 38-39
    Cl/W(100) 40
    I/Fe(100) 37-38
    I/Ni(100) 38-39
  domain boundary, antiphase 40-42
Aluminum (Al), halogen adsorption on 88
Antiphase domain boundary structures, halogen adsorption and 40-42
Atomic scattering
  intensity calculations and 257-259
  layer diffraction and atomic point scatterers 258, 260-261
  surface diffraction 258, 261-264
  thermal diffuse 265

bcc metals. See Body centered cubic metals, halogen adsorption on
Beryllium (Be) 133
Bismuth (Bi), halogen adsorption on 134-136
  chemisorbed structures on 136
  Cl/Bi(0001) 134-135
Body centered cubic metals, halogen adsorption on 90-125
  chromium (Cr) 99-103
  iron (Fe) 90-99
  molybdenum (MO) 103-106
  niobium (Nb) 118
  sodium (Na) and potassium (K) 121-125
  tantalum (Ta) 118-121
  tungsten (W) 106-117
  vanadium (V) 117
Bonding covalent, adatoms 162-163, 164

Bromine (Br)
generation and construction of 33
structure of 44, 46
Bulk solutions 8-9. See also Polymer solutions at interfaces

Carbon (C), halogen adsorption on
Br/kish graphite 137-139
Cl/Grayfoil 137
I/papyex 139
Channel plates and positron sensitive devices, LEED and 249-251
Charge distribution inhomogeneity 219-220
adatom structure and 219
interaction energy and 219-220
many adatoms multivalencies 219-234
type I, discontinuous valence transitions 220-223
type II, continuous valence transitions 223-228
type III, phase seaparations 228-234
Chlorine (Cl), sources of
adsorption and coincidence structures 38-40
generation and construction of 32-33
on KCl 148
on Na/Cl 148
on RbCl 148
structure of 44, 46
Chromium (Cr), halogen adsorption on
Br/Cr(100) 101-102
Br/Cr(110) 102, 103
chemisorbed structures on 100
Cl/Cr(100) 99-100
Cl/Cr(110) 101
comparison with on Fe 99, 101
Cluster method
computation of diffuse LEED intensities 301-302
partial neglection of multiple scattering and 291-293
Coadsorption studies, halogen 149-153
alkali and halogens 151
alkali chloride 151-152
HBr/Cu(100), (111) 152
HBr/Cu(110) 152-153
hydrogen and halogens 149-150
water and halogens 151-152
Complex structures, LEED development and 315, 316
Compression structures model, halogen noncoincident strcuture 37-40, 109. See also Adsorption structures, compression model
Copper (Cu), halide adsorption on 47-53
Br/Cu(100), (110), (111) 51-52
chemisorbed structures on Cu 48
Cl/Cu(100), (111) 47-50
I/Cu(110), (111) 52-53
Corrugation, noncoincident structures of adsorbed halogen and 34-37
Covalent bonding, adatoms 162-163, 164
Critical exponents, phase transitions and 304-305, 308-311
correction of 309-310
order parameter symmetry and 308, 309
scaling laws and 309
for specific heat 308-309
spot profile and 308, 309
Critical line, photosbsorption process and 187, 188-189, 191
Crossover region model, single adatom multivalency
adiabatic limit and variational parameters 180-181
electron population in valence level 177-178
Hartree-Fock approximation and 182-183
mean-field approximation and valence charge 181-182
variational parameters and 178-180

Diffuse low energy electron diffraction (DLEED), disordered adsorption and 300-301, 304
Disorder, LEED analysis and
disordered surfaces 300-304
displacive 299-300
substitutional 297-299
Displacive disorder, LEED analysis and
tensor LEED and 299-300
thermal vibrations and 299
DLEED. See Diffuse low energy electron diffraction
Dynamical version, single adatom multivalency 186-189
calculation formalism 189-197
photoabsorption spectra 197-200
photoemission spectra 200-205
reflectivity spectra 205-206, 207

Energy spectra, very low (VLEED), applied to Ru(100) surface 284-285

Face centered cubic (fcc) metals, halogen adsorption on 47-89
aluminum (Al) 88
copper (Cu) 47-53

(Face centered..., cont.)
gold (Au) 63-68
lead (Pb) 88-89
nickel (Ni) 68-76
palladium (Pd) 76-79
platinum (Pt) 79-86
silver (Ag) 53-63
stainless steel 89
Faraday cup, LEED analysis and 247, 248, 249
fcc metals. See Face centered cubic metals, halogen adsorption on
Fluorine (Fl), generation of 31-32

Gallium antimonide (GaSb), halogen adsorption on 145-146
Gallium arsenide (GaAs), halogen adsorption on 145-146
Gallium phosphide (GaP), halogen adsorption on 146
Germanium (Ge), halogen adsorption on
Br/Ge(111) 145
Cl/Ge(111) 144-145
I/Ge(111) 145
Gold (Au), halogen adsorption on 63-68
Br/Au(100) 64-65, 66-67
Br/Au(111) 65-66, 68
chemisorbed structures on 64
Cl/Au(100) reconstruction 64
Cl/Au(111) 63-64
Cl/polycrystalline Au 64

Hafnium (Hf) 131, 132
Cl/Hf 131-132
Hf/Cl system 132
Hf/Na/Cl system 132
Halide, structure of bulk and halogen structure 45-46
Halogen
adsorbed atom nets, direction 44
noncoincident structures models 34-37
antiphase domain boundary and 37, 40-42
compression structures and 37-40
solid, intermolecular distances in 44-46
sources of 31-34
structure of, bulk halide and 45-46
Halogen adsorption
on bcc metals 43-44, 90-125
on bismuth (Bi) 134-136
on carbon 137-139
coadsorption studies of 149-153
on fcc metals 43-44, 47-89
on hcp metals 126-133

(Halogen adsorption, cont.)
on indium (In) 136
on inorganic substrates 146-148
intermolecular distance in solid halogens 44-46
noncoincident structure formation and 34-37
on semiconductors 140-146
surface directions, bcc and fcc structures 43-44
hcp metals. See Hexagonal close-packed metals, halogen adsorption on
Hexagonal close-packed metals, halogen adsorption on 126-133
berylium (Be) 133
hafnium (Hf) 131-132
magnesium (Mg) 133
ruthenium (Ru) 132-133
scandium (Sc) 126-127
titanium (Ti) 128-130
yttrium (Y) 127-128
zirconium (Zr) 130-131

Image-force stabilization 162-165
adiabatic limit and 167-168
covalent bonding and 166
inverse adiabatic limit 174-177
multivalency for single adatom 166, 183
Indium, halogen adsorption on 136, 146
Intensity calculations, full dynamical, LEED and 256-257
atom scattering and 257-259
computational limitations 266-268
inner potential and 264
intraatomic scattering and 259
layer diffraction and 258, 262-264
nonstructural parameters 264-265
optical potential and 264-265
surface diffraction 258, 261-264
Intensity measurements, LEED and 246
by Faraday cup and spot photometer 248-249
photographic techniques 251
video techniques 251-256
Interaction energy, strcuture problem and repulsive long-range interaction 216-219
dipole-dipole lateral 206, 208
homogeneous charge distribution breakdown 207-208
mutual in homogeneity of charge distribution 219-234
repulsive long-range structure problem 208-210

(Interactions, cont.)
interaction energy 216-219
on roughened surface 212-216
on smooth surface 210-212
Iodine (I) generation and construction of 33-34
coincidence structures and adsorption of 37-39
structure of 44-45, 46
Iron (Fe), halogen adsorption on 90-99
Br/Fe(100) 91-93, 94
Br/Fe(110) 93, 95
chemisorbed structures on Fe 96
Cl/Fe(110) 91
Cl/Fe(111) 90-91
Cl/Fe clusters 91
I/Fe(100) 95, 97-98
I/Fe(110) 98

Layer diffraction, LEED analysis and 258
matrix inversion method 260-261
reverse scattering perturbation method 261
Layer doubling (LD) method, surface refraction 262-263
Lead (Pb), halogen adsorption on 88-89
LEED. See Low energy electron diffraction
LEED apparatus
componenents of 244-245
detectors and 246
LEEM (low energy electron microscope) mode 246
MEMLEED (mirror electron microscope by low energy electron diffraction) mode 246
LEED microscopes 246, 317
Low energy electron diffraction (LEED), structural analysis of surfaces
data acquisition methods 244-246
channel plates and position sensitive devices 249-251
Faraday cup and spot photometer 247-249
photographic and video techniques 251-256
disordered surfaces 296-304
future of 315-317
intensity calculations, full dynamical 256-257
computational limitations 266-268
parameters, nonstructural 264-265
standard methods 257-264

(Low energy electron...,cont.)
phase diagrams and phase transitions 304-305
critical exponents 304-305, 308-311
phase diagrams 305-307
structural transitions, kinetics of 311-315
potentials of 241-244
special cases and approximations
partial neglection, multiple scattering 285-293
tensor LEED 293-296
very low energy spectra 284-285

Magnesium (Mg) 133
Many adatoms, multivalencies of 206-208
charge distribution, inhomogeneity of 219-220
type I, discontinuous valence transitions 220-223
type II, continuous valence transitions 223-228
type III, phase separation 228-234
structural problem and repulsive long-range interaction 210
interaction energy 216-219
on roughened surface 212-216
on smooth surface 210-212
Molybdenum (Mo), halogen adsorption on
chemisorbed structures 106
Cl/Mo(110) 103, 104-105
Multivalencies for adatoms 162-166
many adatoms 206-234
single adatom 166-206, 207

Neglection, partial, multiple scattering and 285-293
beam set neglect 290-291
cluster method 291-293
full dynamical and beam set results compared 290-291
quasidynamical approximation 287-290
Nickel (Ni), halogen adsorption on
B/Ni(100) 71
chemisorbed structures on 71
Cl/Ni(100) 68-69
Cl/Ni(110) 69-70
Cl/Ni(111) 68
I/Ni(100) 72-76
Niobium (Nb), halogen adsorption on 118

Oxides, halogen adsorption on 146-148
Cl/O(0001) 147
Cl/Zn(0001) 146-147
I/MgO(100) 147-148

Palladium (Pd), halogen adsorption on
astatine/polycrystalline Pd 79
Br/Pd(111) 78-79
chemisorbed structures on 77
Cl/Pd(110) 77
Cl/Pd(111) 76-77
Phase diagrams, LEED intensities and 304, 305-308
adatom interactions and 307
coverage variation and 305, 306
diffraction patterns 306
real space structure proposals 306
temperature variation and 305-306
Phase separation, charge distribution inhomogeneity and 228-234
adatom occupation of sites 229-231
confirmation of 232, 233-234
continuous phase transition and 231-233
total energy, adsorbed system and 228-230
Phase shift calculations, LEED structure determinations and 258-259, 264-265
Phase transitions, LEED intensities and 304
continuous, spot profiles and 308
critical exponents characteristics and 304-305
order-disorder transitions 306, 307
Photoabsorption spectra, single adatom multivalency 197-200
critical line effect on 187, 188-189, 191, 197
line shape of 198-200
temporal change and effective enegy level and 197-198
Photoemission process, adsorbed system, calculation formalism 188, 191, 195-196
Photoemission spectra, single adatom multivalency 200
characterization of 204, 205
charge transfer and 202
line shape calculation 201-203
temporal changes and 201
Photometer, spot, LEED analysis and 247-249
Platinum (Pt), halogen adsorption on 79-86
Br/Pt 84
chemisorbed structures on 83
Cl/Pt(110) 81-82, 83
Cl/Pt(111) 80-81, 83
Cl/Pt clusters 82-84
(Platinum..., cont.)
Fl/Pt(100) 80
Fl/Pt(111) 79-80
HI/Pt(100) 86
I/Pt(111) 84-85
I/Pt stepped surface 86
Potassium (K), halogen adsorption on 125
Polymer concentration profiles with molecular weight, moments of
contact thickness and 16
ellipsometry and 15
hydrodynamic thickness and 15-16
reflection from polymer investigation 20-22
scattering experiments and polymer signal test, scaling predictions 19-20
surface tension and 16
Polymer solutions at interfaces 6-22
grafted polymer situation 13-15
interactive surfaces situation 10-13
moments of polymer concentration profiles with molecular weight 15-16
scattering experiments, concentration profile observations 16-22
Polymers, grafted, solutions at interfaces 13-15
Position sensitive devices 250-251. See also Channel plates and position sensitive devices, LEED analysis
Precision of structural determination, LEED development and 315-316
Precision standards, theoretical and experimental data agreement and
Bragg peaks and 277, 278
interatomic distances, vertical or parallel 278-280
R-factor, all beams average 278
structural parameters error 278-281

Reliability factors, LEED analysis and
best fit structure 271-272
Hausdorf distance 270, 271, 275
intensities derivatives 269-270
Levy distance 270, 275
R-factor selection 271-272
Renormalized forward scattering (RFS), surface diffraction 263-264
Rhodium (Rh), halogen adsorption on
chemisorbed structures on 88
Cl/Rh(100 87-88
Cl/Rh(111) 86-87

Roughened surface, adatom structure problem, repulsive long-range interactions on 212-216
commensurate structures of adatoms amd 214-215
integer sets 213, 215
regular triangular lattice 215, 216
Ruthenium (Rh), halogen adsorption on
chemisorbed structures on 133
Cl/Ru(100) 132-133

Scaling predictions, polymer interfaces near surface. See also Polymer solutions at interfaces
bulk solutions 8-9
moments of polymer concentration profiles with molecular weight 15-16
polymer solutions near interface 9-15
scattering experiments and observation of concentration profile 16-22
Scandium (Sc), halogen adsorption on 126-127
Scattering, partial neglection of multiple 285-287
beam set neglect 290-291
cluster method 291-293
quasidynamical approximation 287-290
Semiconductors, halogen adsorption on 140-146
gallium (Ga) 145-146
germanium (Ge) 144-145
indium (In) 146
silicon (Si) 140-144
Silicon (Si), halogen adsorption on
Br/Si(111) 143-144
Br/Si(220) 143
Cl/Si(111) 142-143
F/Si(111) 140-141
F/Si clusters 141-142
I/Si(111) 144
Silver (Ag), halogen adsorption on
chemisorbed structures on 58
Cl/Ag(110), (111) 54-56, 59
Cl/Ag clusters 57
Cl/polycrystalline Ag 56-57
I/Ag(110), (110), (111) 59-62
I/Ag clusters 63
Single adatom multivalency
covalent bonding and 166-167
dynamical version 186-189
calculation formalism 189-197
photoabsorption spectra 197-200
photoemission spectra 200-205
(Single adatom..., cont.)
reflectivity spectra, gas/metal surfaces 205-206, 297
image-force stabilization and 166-167
static version
adiabatic limit 174-177
inverse 174-177
crossover region model 177-183
parameters, various systems 183-186
Smooth surface, structure problem and repulsive long-range interactions on 210-212
Bravais lattice 210-211
free energy and 210
interaction energy 209, 211
triangular lattice 212
Sodium (Na), halogen adsorption on
Br/Na 121-122
chemiluminescence spectra 122-123
Cl/Na films, evaporated 121
exoelectrons and 123-124
Stainless steel, halogen adsorption on 89
Structural transitions, kinetics of
adsorption-desorption process 314-315
size effects and 312
spot profile measurements 312, 313
surface free energy dependence 314
temperature dependence 312-313
time dependence 311-312, 313
Structure, information retrieval and LEED analysis 268-283
accuracy standard 282-283
precision standard 277-282
reliability factors 269-272, 273,274
search correct structure 272-277
Substrates, inorganic 146-149
Surface diffraction 258, 261-264
interlayer multiple 262
layer doubling method 262
layer type, beam set neglect and quasidynamical approximation 287-291
matrix inversion method and 261-262
renormalized forward scattering and 263-264
Surfaces, LEED analysis and
disordered 300-304
interactive, polymer solutions at interfaces and 10-13
smooth 210-212

Tensor LEED (TL) approximation
  applications 294
  comparison, TL and fully dynamical results 295
  inplane zig-zag model 295-296
  theoretical levels of 293-294
Titanium (Ti), halogen adsorption on 128, 130
Transitions. See Phase transitions; Structural transitions
Tungsten (W), halogen adsorption on
  Br/polycrystalline W 112
  Br/W(100) 112
  Cl/W(100) 108-109
  Cl/W(110) 106, 110-111
  Cl/W(111) 106, 108, 110
  desorption of Fl/W(110), (111) 106-107
  polycrystalline W, chemisorptive emission of electrons from 107-108
  I/W(100) 112-113
  I/W(110) 113-117
  thermal desorption, Cl atoms and 110

Uranium (U), halogen adsorption on 136-137

Vaccancies and substitutional disorder, LEED analysis and 297-299
Valence transition, charge distribution inhomogeneity and
  continuous 223-228
  discontinuous 220-223
Vanadium (V), halogen adsorption on
  Br/V(100) 117
  chemisorbed structures on 120
  Cl/V(100), (110) 117
Videotechniques, LEED data acquisition and 251-256
  computer controlled video 252-256
  vidicon camera, intensity measurements 251-252
VLEED (Very low energy electron diffraction) 284-285. See also Energy spectra, very low (VLEED)

Yttrium (Y), halogen adsorption on
  Br/Y 127-128
  Cl/Y 127
  Na/Y 128

Zirconium (Zr)
  I/Zr 131
  Zr/Cl 130, 131
  Zr/Na/Cl 130